

Remarks

Reconsideration of this application is requested. Claims 1, 5, 11, and 17 have been amended to overcome prior art rejections and to correct a 35 USC §112, second paragraph, rejection. Claim 9 has been canceled per this response and claims 1-8 and 10-20 remain in this application.

Claim rejection - 35 U.S.C. §112, second paragraph

It was stated in the Office Action that claims 1-20 were rejected under 35 U.S.C. §112, second paragraph, as being incomplete for omitting essential elements. Base claims 1, 11, and 17 have been amended to recite "a plurality of subcarriers" from which a subcarrier (carrier) may be selected. Also, claim 5 has been amended to delete the phrase "active electronic devices".

It is believed these changes made to base claims 1, 11, and 17, as well as the changes made to dependent claim 5 now overcome the U.S.C. §112, second paragraph, rejection.

Response to the 35 U.S.C. §102(b) Rejection

The Office Action rejected claims 1-20 under 35 U.S.C. §102(b) as being anticipated by Chini et al. (U.S. Publication No. 2002/0191533).

Claims 1-10

Applicant's amended claim 1 recites a transmitter having channel knowledge of a communication link to select a subcarrier that suffers from channel impairments from a plurality of subcarriers, wherein the selected subcarrier is punctured prior to transmission by placing no information in the selected subcarrier and transmitted power is re-allocated to information carrying subcarriers.

Support for the amended language of Applicant's claim 1 can be found in the specification on page 5, starting on line 32, and again on page 6, starting at line 9.

In paragraph [0020] Chini et al. teach that a "non-data bearing" carrier may occur in any modulation scheme that produces a carrier or pilot tone that is used for other purposes besides data transmission, such as synchronization,

carrier recovery, timing recovery or channel characterization for example. In paragraph [0021] and referring to FIG. 2, Chini et al. teach and illustrate a composite transmit signal produced by a multi-carrier modulation system that modulates random data onto the non-data bearing carriers. The "random data" may be either (1) truly random in nature and produced by a random bit generator or (2) pseudo-random in nature and produced by a pseudo-random bit generator. Then again in paragraph [0030] and with reference to FIG. 6 Chini et al. teach that the receiver analyzes signals to determine carriers in an unreliable state, and that this channel information is then relayed back to the transmitter. Although Chini et al. teach that data is not transmitted on these unreliable carriers, it is clear that random data is placed on these non-data bearing carriers to better analyze and characterize the channel.

In contrast to the Chini et al. teaching that unreliable carriers are identified and selected to transmit random data, at least two features of Applicant's claim are not taught by Chini et al. Namely, (1) that the selected subcarrier is punctured prior to transmission by placing no information in the selected subcarrier, and (2) transmitted power is re-allocated to information carrying subcarriers. Accordingly, the relied upon reference of Chini is not sufficient to anticipate Applicant's claimed invention and the reference should be withdrawn.

Dependent claims 2-8 and 10 directly depend from base claim 1 and are believed allowable over the art of record for at least the same reasons as base claim 1. Dependent claim 9 has been canceled per this response and the rejection of this claim is now moot.

Claims 11-16

Applicant's amended base claim 11 recites a transmitter to perform multi-carrier modulation and having channel knowledge of a communication link to select a carrier from a plurality of carriers to puncture prior to transmission by placing no information in the selected subcarrier.

Chini et al. teach that unreliable carriers are identified and selected to transmit random data which is information used by the receiver to characterize the carrier. In contrast, Applicant's amended claim 11 recites that the carrier is

selected from a plurality of carriers to puncture prior to transmission by placing no information in the selected subcarrier. At least this feature is not taught or suggested by the prior art reference of Chini et al. Accordingly, the relied upon reference of Chini is not sufficient to anticipate Applicant's claim 11 and the reference should be withdrawn.

Dependent claims 12-16 directly depend from base claim 11 and are believed allowable over the art of record for at least the same reasons as base claim 11.

Claims 17-20

Applicant's amended base claim 17 recites a processor coupled to the at least one receiver chain to select a subcarrier from a plurality of subcarriers to puncture prior to transmission based on channel knowledge of a communication link where no information is placed in the selected subcarrier and transmitted power is re-allocated to information carrying subcarriers.

As already mentioned, Chini et al. do not teach that a subcarrier is punctured by placing no information on the selected subcarrier and that transmitted power is re-allocated to information carrying subcarriers. Accordingly, the relied upon reference of Chini is not sufficient to anticipate Applicant's claim 17 and the reference should be withdrawn.

Dependent claims 18-20 directly depend from base claim 17 and are believed allowable over the art of record for at least the same reasons as base claim 17.

Conclusion

The foregoing is submitted as a full and complete response to the Office Action mailed March 6, 2007, and reconsideration of the objections and rejections is requested. It is submitted that claims 1-11 and 16-18 are now in condition for allowance. Allowance of these claims is earnestly solicited.

Applicants herewith petition the Director of the United States Patent and Trademark Office to extend the time for response to the Office Action dated March 6, 2007, for 2 months. Please charge Deposit Account #50-0221 in the amount of \$450.00 for a two month extension. Should it be determined that an

additional fee is due under 37 CFR §1.16 or 1.17, or any excess fee has been received, please charge that fee or credit the amount of overcharge to deposit account #50-0221.

If the Examiner believes that there are any informalities that can be corrected by an Examiner's amendment, a telephone call to the undersigned at (480) 715-5388 is respectfully solicited.

Respectfully submitted,
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